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Comment on Giorgio De Santis, Bruno Gerard, and Pierre Hillion: Portfolio choice and currency risk inside and outside the EMU

Peter Hördahl *

As globalisation and integration of financial markets has intensified over the years, it has become increasingly important for investors to take currency risks into account. Furthermore, since the single European currency is now a fact, a highly relevant question is how the replacement of 11 national European currencies by the euro is likely to affect portfolio choices of international investors. The paper by De Santis, Gerard, and Hillion deals with precisely these important matters. As I see it, there are three main issues that the authors focus on:

- Is currency risk an important factor in international portfolio management?
- If it is, how can the currency risk component be used when implementing portfolio strategies?
- What is the impact of the adoption of the euro on the risk-return trade-off for international investors?

The authors investigate these matters using conditional versions of the international CAPM, where the expected excess return on a foreign asset, measured in the home currency, consists of a world market (equity) risk premium and a currency risk premium component. The setup of the model is very general and allows, for example, for time-varying conditional variances and covariances as well as time-variation in the prices of risk. In answer to the first question, the empirical results show that currency fluctuations induce a systematic source of risk in returns, which are found to be priced by the market. Moreover, the currency risk and the currency risk premium tend to vary over time.

Given these results, it is naturally of interest to investigate how the currency risk component can be exploited when implementing portfolio strategies. The conditional international CAPM specification

* *Economist at* Sveriges Riksbank.

used in the paper generates estimates of the conditional moments required to generate the optimal portfolio choice of an international investor in each period. The authors conclude that it is important to implement *dynamic* asset-allocation strategies that take advantage of the time-varying nature of risks and expected returns. Furthermore, it is important to *simultaneously* determine the weights of the stocks and the currencies. Empirically, an unrestricted optimal strategy (a strategy that is dynamic and where the weights are determined simultaneously) is found to outperform a passive equity strategy and equity strategies with currency hedging and speculation.

What is the likely impact of the adoption of the euro on the risk-return trade-off for international investors? The paper demonstrates that most of the benefits of currency risk management result from managing non-EMU currency risk, while EMU currency risk management generates only limited additional benefits. So the conclusion is that the adoption of the euro is unlikely to have any substantial impact on the portfolio trade-offs for international investors.

The results provided in the present paper are interesting insofar as they are appealing from a theoretical viewpoint and also highly relevant for practical purposes. So it is difficult to have any serious objections about the main conclusions drawn in the study. Nevertheless, I do have a few comments on some methodological and empirical aspects of the paper. My comments revolve around three issues:

1. Specification of the risk measure in the model
2. Choice of EMU currencies
3. Measure of currency risk premia for EMU countries.

1. Specification of the risk measure in the model

The international CAPM stipulates that the relevant measure of currency risk for an investment in a foreign asset is the covariance between changes in the exchange rate and returns on the foreign asset, measured in the home currency of the investor. This implies that, as stated by the authors, "exchange-rate volatility ... is not an appropriate measure of currency risk". While this certainly is true in theory, in practice, it is at least conceivable that investors worry more about

volatility than covariance risk, especially given the tremendous focus on volatility in the foreign-exchange market. In any case, it provides a good opportunity for testing the specification of the model by investigating whether currency volatility is priced by the market, possibly in addition to the covariance.[1] Alternatively, the covariance between changes in the exchange rate and returns on the foreign asset, measured in the home currency, could be divided into two components:

1. The variance of the exchange rate
2. The covariance between exchange-rate changes and returns on the foreign asset, measured in the *foreign* currency.

According to the model, the price of risk associated with these two components should be identical. Again, this provides a testable implication that can be used to check the specification of the model.

2. Choice of EMU currencies

The second point that I would like to make deals with the choice of EMU currencies. In the paper, the French franc (FRF) and the Dutch guilder (NLG) represent the EMU currencies available to the hypothetical German investor, in addition to the home currency, i.e. the German mark (DEM). A natural question, given this choice of EMU currencies, is whether these are representative for the entire euro area. Because the FRF, the NLG and the DEM have been highly correlated during much of the sample period, it is not surprising that the effects of excluding two of these currencies are small.

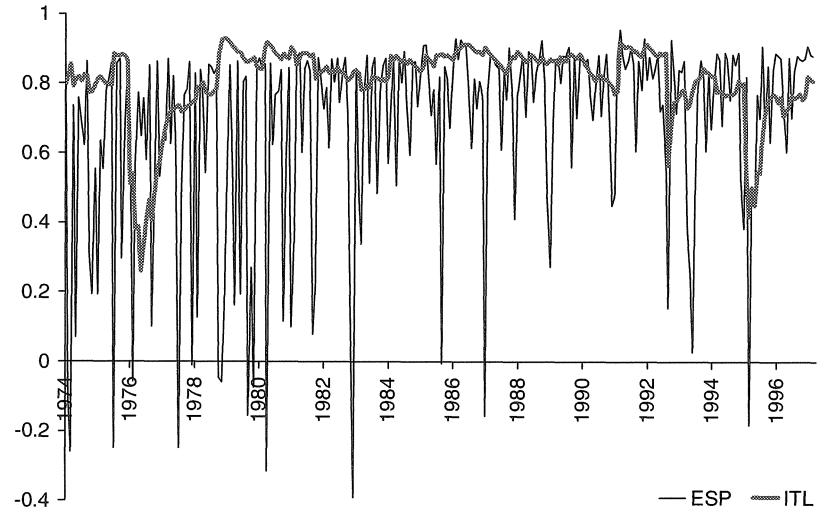
Figure 1 displays the time-varying correlations between the DEM and the French and Dutch currencies, relative to the US dollar (USD), as obtained from a bivariate GARCH (1.1) model.

Figure 2 shows the corresponding estimates for the Spanish peseta (ESP) and the Italian lira (ITL). The figures reveal that there are substantial differences in the correlations with the DEM between the FRF and NLG on one hand and the ESP and ITL, on the other. So it would be interesting to investigate whether the results in the paper concerning the small impact of the single currency would change if the ITL and the ESP were included as EMU currencies.

[1] This is similar to the conditional residual risk model used by Gonzáles-Rivera (1996) to reject the CAPM for US computer industry stocks. See also Hansson and Hördahl (1998).

Figure 1. Time-varying correlation between the DEM/USD and FRF/USD exchange rates and between the DEM/USD and NLG/USD rates.

Figure 2. Time-varying correlation between the DEM/USD and ESP/USD exchange rates and between the DEM/USD and ITL/USD rates.



3. Measure of currency risk premia for EMU countries

My third and last comment concerns the relevant measure of currency risk and risk premia for the EMU currencies. The measure of risk used in the paper originates from a GARCH model, which postulates that variances and covariances are functions of past exchange-rate shocks and past second moments. But for many of the EMU currencies, the main source of risk before the start of the monetary union was the possibility of sudden large realignments within the Exchange Rate Mechanism (ERM). It is unlikely that a standard GARCH model can capture realignment risk in a satisfactory way. Hence, an interesting extension would be to augment the GARCH model to allow it to incorporate the risk of realignments within the ERM. Alternatively, the vector of conditioning variables for the price of exchange-rate risk could include some variable that measures realignment risk. Rose and Svensson (1995), among others, suggest various measures of realignment risk based on a target zone model, which may be useful for this purpose. Again, it would be interesting to see whether the conclusions regarding the small impact of the single currency would remain unchanged if the realignment risk factor was incorporated in the model. The results should be of great interest for investors and policymakers in countries currently participating in (or joining) ERM2, where the question of full EMU membership may soon arise.

References

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